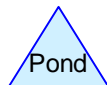
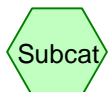


# Existing Conditions



## Routing Diagram for 1706Existing

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**1706Existing**

Prepared by Fairfield County Engineering LLC

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Type III 24-hr 50 Year Rainfall=7.44"

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Page 6

**Summary for Subcatchment 1S: Existing Conditions**

Runoff = 6.23 cfs @ 12.08 hrs, Volume= 0.437 af, Depth&gt; 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

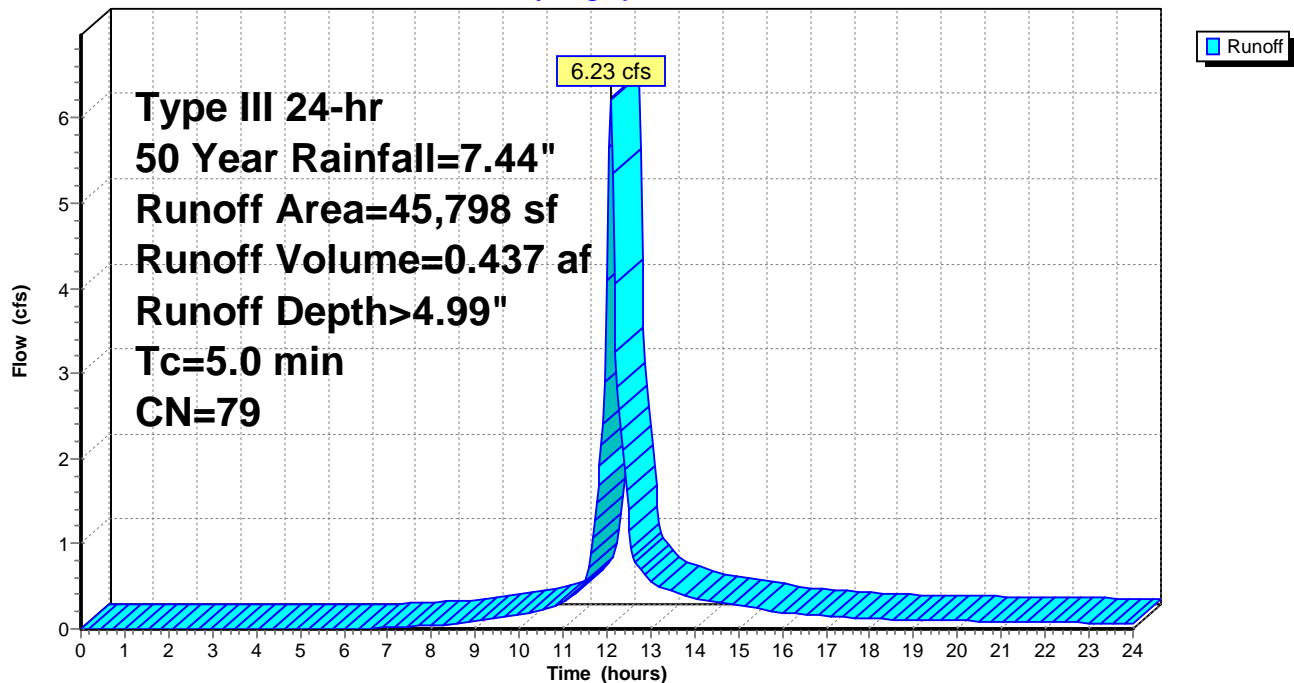
Type III 24-hr 50 Year Rainfall=7.44"

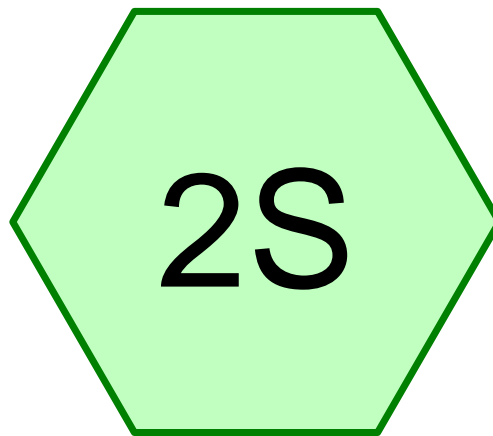
Area (sf)	CN	Description
45,798	79	50-75% Grass cover, Fair, HSG C
45,798		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

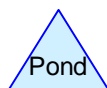
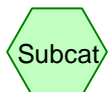
**Subcatchment 1S: Existing Conditions**

Hydrograph





# Proposed Conditions



## Routing Diagram for 1706ProposedRev1

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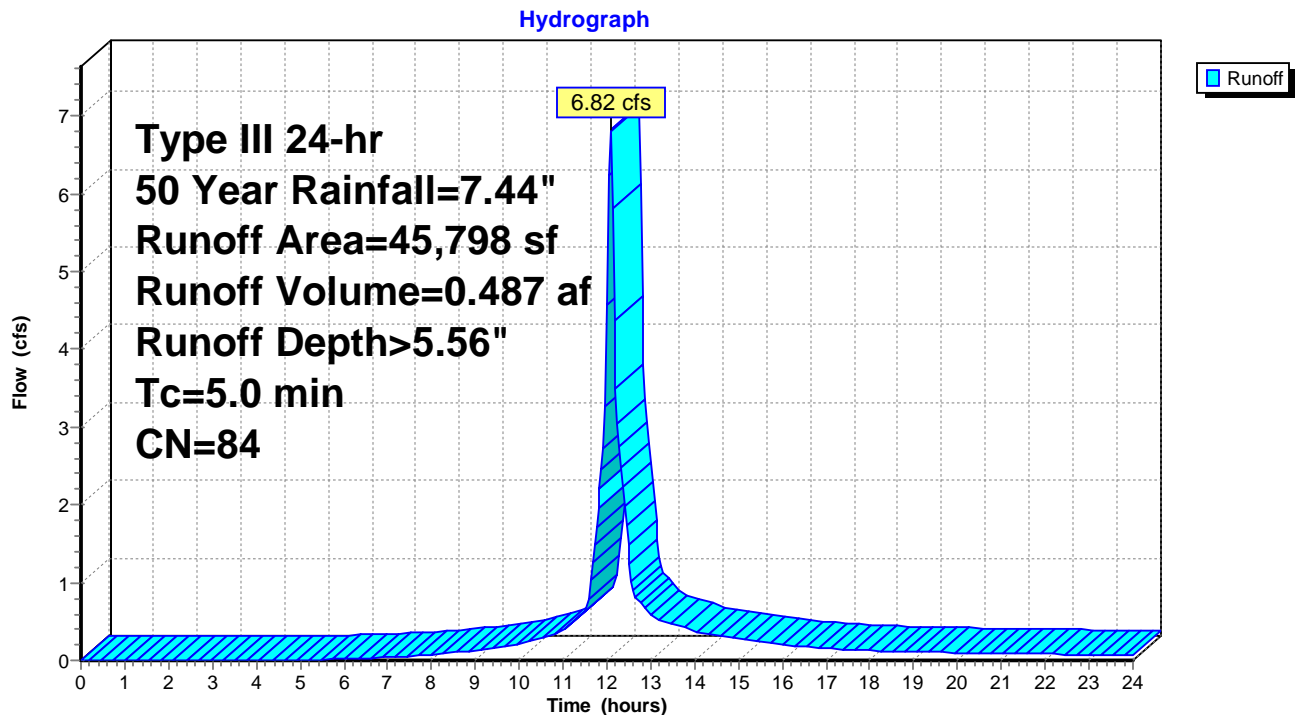
**Summary for Subcatchment 2S: Proposed Conditions**

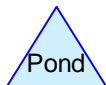
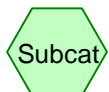
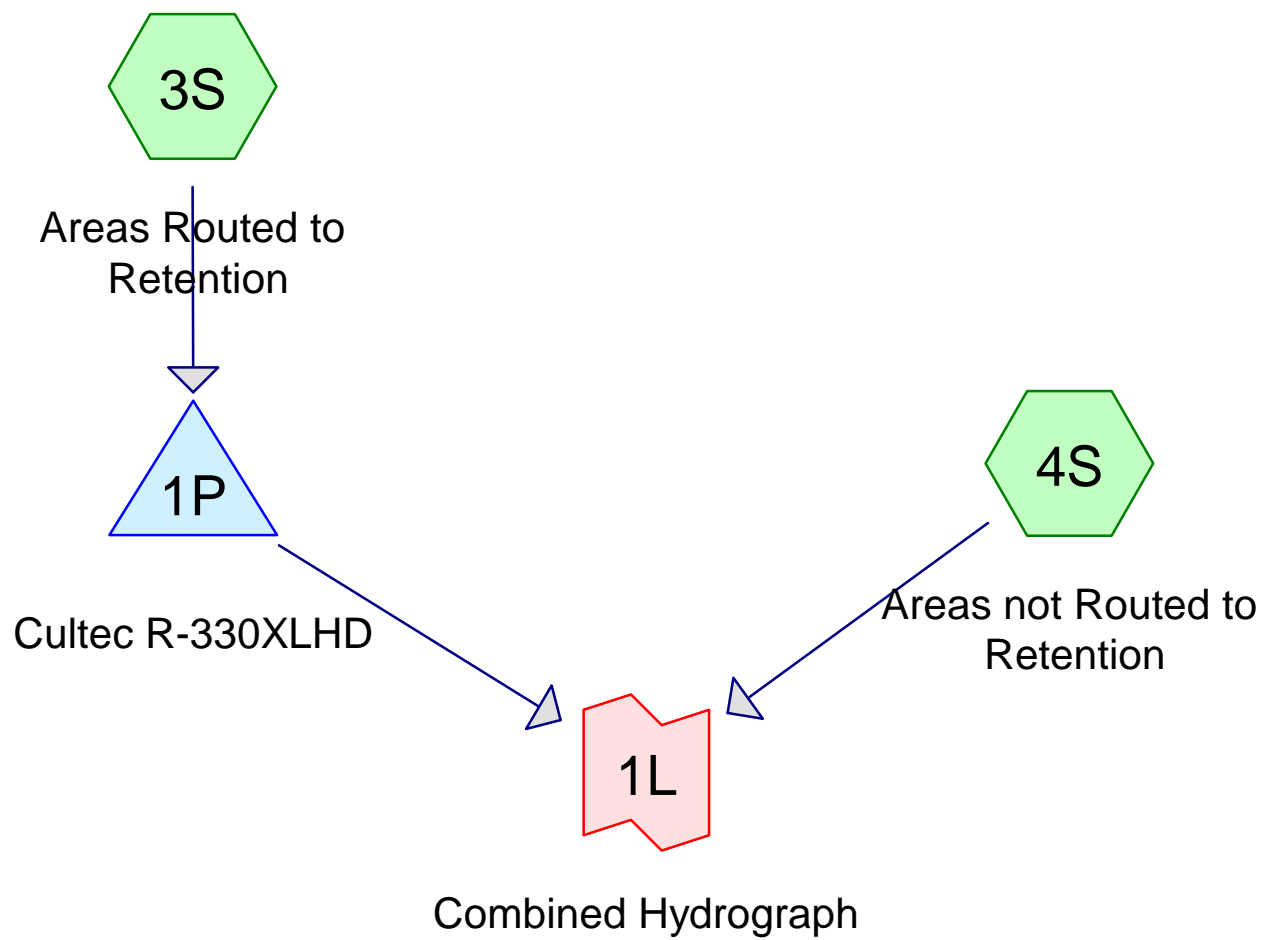
Runoff = 6.82 cfs @ 12.07 hrs, Volume= 0.487 af, Depth> 5.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs  
Type III 24-hr 50 Year Rainfall=7.44"

	Area (sf)	CN	Description
*	4,436	98	House
*	3,895	98	Driveway
*	519	98	Patios
*	190	98	Walks
*	686	98	Pool
*	1,412	98	Pool Patio
	34,660	79	50-75% Grass cover, Fair, HSG C
	45,798	84	Weighted Average
	34,660		75.68% Pervious Area
	11,138		24.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

**Subcatchment 2S: Proposed Conditions**



**Routing Diagram for 1706CombinedRev1**  
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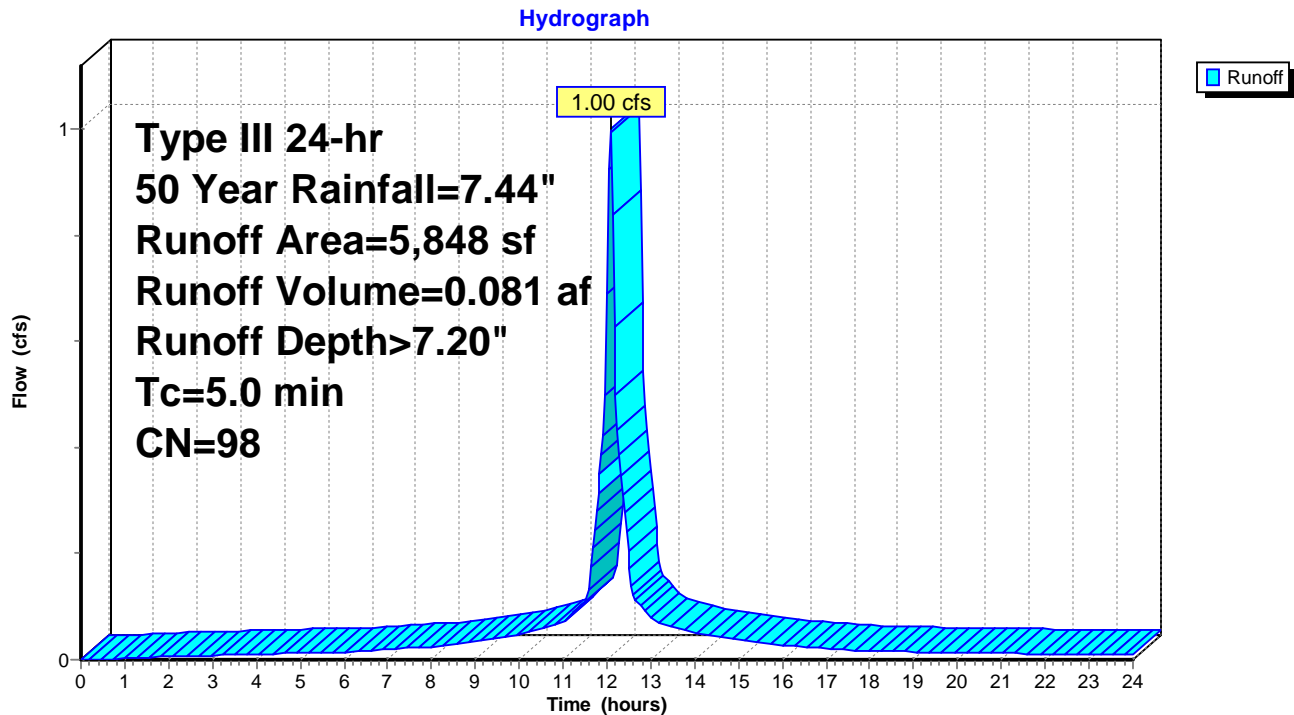
**Summary for Subcatchment 3S: Areas Routed to Retention**

Runoff = 1.00 cfs @ 12.07 hrs, Volume= 0.081 af, Depth> 7.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs  
Type III 24-hr 50 Year Rainfall=7.44"

	Area (sf)	CN	Description
*	4,436	98	House
*	1,412	98	Pool Patio
	5,848	98	Weighted Average
	5,848		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

**Subcatchment 3S: Areas Routed to Retention**

**Summary for Subcatchment 4S: Areas not Routed to Retention**

Runoff = 5.75 cfs @ 12.08 hrs, Volume= 0.407 af, Depth> 5.33"

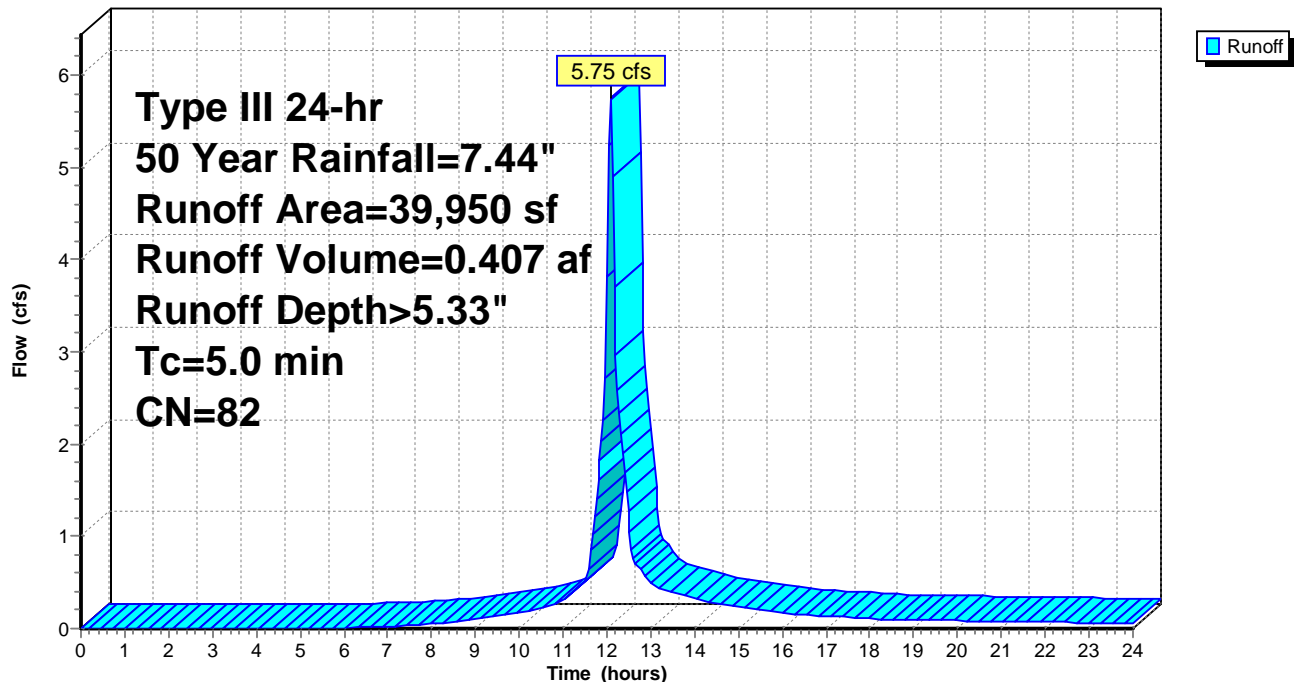
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs  
Type III 24-hr 50 Year Rainfall=7.44"

	Area (sf)	CN	Description
*	3,895	98	Driveway
*	519	98	Patios
*	190	98	Walks
*	686	98	Pool
	34,660	79	50-75% Grass cover, Fair, HSG C
	39,950	82	Weighted Average
	34,660		86.76% Pervious Area
	5,290		13.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, Direct

**Subcatchment 4S: Areas not Routed to Retention**

Hydrograph



**Summary for Pond 1P: Cultec R-330XLHD**

Inflow Area = 0.134 ac, 100.00% Impervious, Inflow Depth > 7.20" for 50 Year event  
 Inflow = 1.00 cfs @ 12.07 hrs, Volume= 0.081 af  
 Outflow = 0.62 cfs @ 12.17 hrs, Volume= 0.060 af, Atten= 38%, Lag= 5.9 min  
 Discarded = 0.02 cfs @ 7.60 hrs, Volume= 0.035 af  
 Primary = 0.60 cfs @ 12.17 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs / 3  
 Peak Elev= 115.94' @ 12.17 hrs Surf.Area= 618 sf Storage= 1,212 cf

Plug-Flow detention time= 160.3 min calculated for 0.059 af (74% of inflow)  
 Center-of-Mass det. time= 71.5 min ( 812.4 - 740.9 )

Volume	Invert	Avail.Storage	Storage Description
#1A	113.00'	429 cf	<b>35.33'W x 17.50'L x 3.04'H Field A</b> 1,881 cf Overall - 808 cf Embedded = 1,072 cf x 40.0% Voids
#2A	113.00'	808 cf	<b>Cultec R-330XLHD</b> x 14 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 7 rows
		1,237 cf	Total Available Storage

Storage Group A created with Chamber Wizard

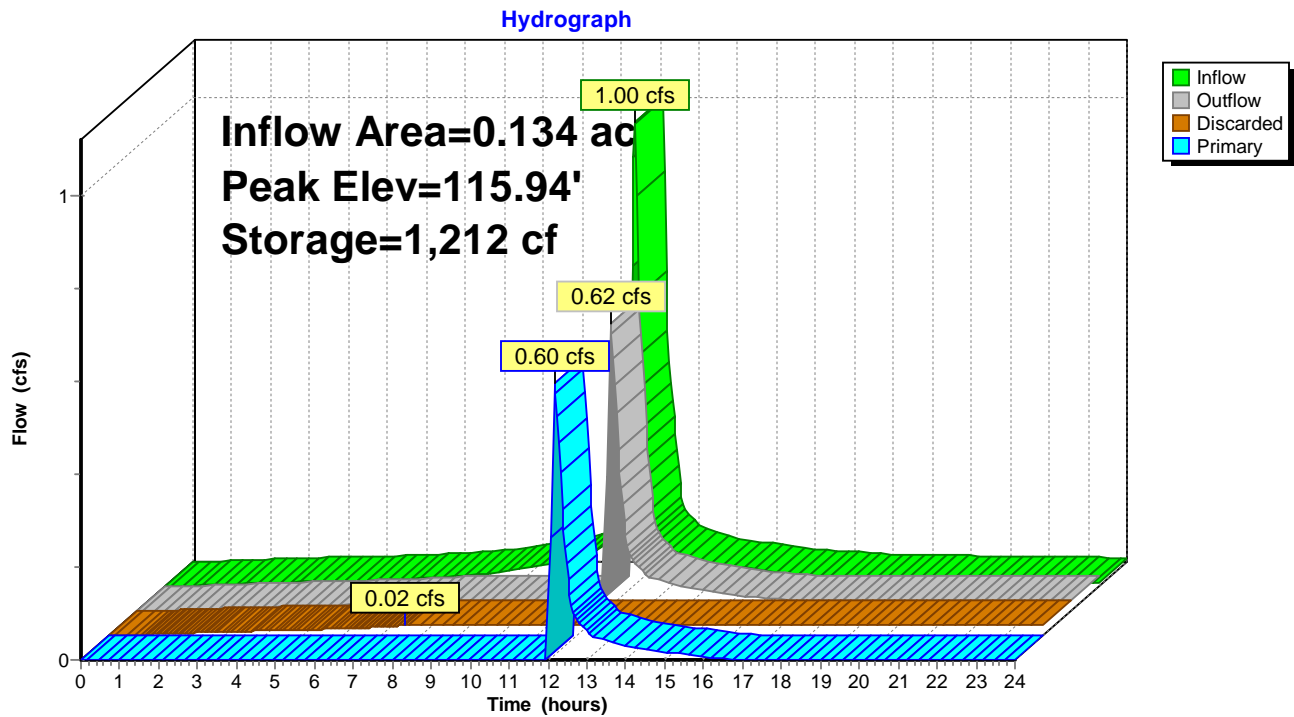
Device	Routing	Invert	Outlet Devices
#1	Primary	115.54'	<b>6.0" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#2	Discarded	113.00'	<b>1.500 in/hr Exfiltration over Horizontal area</b>

**Discarded OutFlow** Max=0.02 cfs @ 7.60 hrs HW=113.03' (Free Discharge)  
 ↑ **2=Exfiltration** (Exfiltration Controls 0.02 cfs)

**Primary OutFlow** Max=0.59 cfs @ 12.17 hrs HW=115.93' (Free Discharge)  
 ↑ **1=Orifice/Grate** (Orifice Controls 0.59 cfs @ 2.99 fps)



## Pond 1P: Cultec R-330XLHD



**Summary for Link 1L: Combined Hydrograph**

Inflow Area = 1.051 ac, 24.32% Impervious, Inflow Depth > 4.93" for 50 Year event  
Inflow = 5.74 cfs @ 12.08 hrs, Volume= 0.432 af  
Primary = 5.74 cfs @ 12.08 hrs, Volume= 0.432 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.04 hrs

**Link 1L: Combined Hydrograph**